

Welding, Cutting and Brazing General Requirements

Self-Inspection Checklist




Optional Information

Name of School:
Date of Inspection:
Career-Technical program/course/room:
Signature of inspector:

Guidelines:

This checklist covers regulations issued by the U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) under the general industry standard 29 CFR 1910.25 and the construction standards 29 CFR 1926.351, 1926.352, 1926.353, and 1926.354. The checklist applies to operations involving welding, cutting, brazing, and heating. This checklist does not cover in detail regulations dealing with work in confined or enclosed spaces. If these conditions are encountered, please consult 29 CFR 1910.146, 1910.252, and 1926.353. The regulations cited apply only to private employers and their employees, unless adopted by a State agency and applied to other groups such as public employees. A yes answer to a question indicates that this portion of the inspection complies with the OSHA or U.S. Environmental Protection Agency (EPA) standard, or with a nonregulatory recommendation.

 Questions marked with this symbol may require the help of an outside expert.

Fire Prevention and Protection

1	Are all moveable fire hazards and combustibles moved to at least 35 feet away from areas or objects to be welded? [29 CFR 1910.252(a)(1)(i) and 1910.252(a)(2)(vii) and 1926.352(a)]
2	When welding or cutting operations are performed within 35 feet of combustible materials or floor, ceiling, or wall openings, are guards, barriers, or other precautions used to confine heat sparks and slag? [29 CFR 1910.252(a)(1)(ii), 29 CFR 1910.252(a)(2)(iii)(A), and 1926.352(b)] <i>Note: If all fire hazards cannot be removed or when the floor, ceiling, or wall has openings, special precautions listed in 1910.252(a)(2) and 1926.352(e) and (f) may be necessary. These requirements include having fire watchers present during and up to 30 minutes after the job is done; having an inspection conducted before beginning work; covering or wetting combustible materials; relocating combustibles; and covering or shutting down ventilation ducts and conveyors. In some cases, welding or cutting is prohibited if sprinkler systems are inoperable or unusual fire and explosion hazards exist.</i>

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Fire Prevention and Protection

3	Is welding prohibited where flammable materials are used (such as paints) or where heavy dust concentrations are present? [29 CFR 1926.352(c)]
4	Is suitable fire extinguishing equipment kept where welding or cutting is done? Is this equipment ready for instant use? [29 CFR 1910.252(a)(2)(ii) and 1926.352(d)]
5	When students or employees weld or cut containers such as barrels or tanks, are the containers thoroughly cleaned to remove materials that, when heated, may cause fire, explosion, or release of toxic materials? [29 CFR 1910.252(a)(3)(i) and 1926.352(i)] <i>Note: The construction regulations in 1926.352(i) also permit barrels or tanks to be filled with water as an alternative to cleaning.</i>
6	Before welding or cutting containers, are all hollow spaces and cavities vented to release trapped air or gases? [29 CFR 1910.252(a)(3)(ii) and 1926.352(j)] <i>Note: Purging with inert gas is recommended.</i>

Protection of Personnel



7	Are welding cables and hoses kept clear of passageways, ladders, and stairways? [29 CFR 1910.252(b)(1)(ii)]
8	Are welders, cutters, brazers, and helpers given suitable face, neck, and ear protection to prevent direct radiant energy from the arc? [29 CFR 1910.252(b)(2)(ii)(B)]
9	Are welders, cutters, brazers, and helpers given suitable eye protection with proper filter lens shade numbers? [29 CFR 1910.252(b)(2) and 1926.353(e)(2)] <i>Note: The following is a guide for selecting proper shade numbers. These recommendations may vary to suit individual needs: [29 CFR 1910.252(b)(2)(ii)(H)]</i>

Welding Operations*	Shade No.
Shielded metal-arc welding: 1/16-, 3/32-, 1/8-, 5/32-inch electrodes	10
Gas-shielded arc welding (nonferrous): 1/16-, 3/32-, 1/8-, 5/32-inch electrodes	11
Gas-shielded arc welding (ferrous): 1/16-, 3/32-, 1/8-, 5/32-inch electrodes	12
Shielded metal-arc welding: 3/16-, 7/32-, 1/4-inch electrodes; 5/16-, 3/8-inch electrodes	12 14
Atomic hydrogen welding	10-14
Carbon arc welding	14
Soldering	2
Torch brazing	3 or 4
Light cutting, up to 1 inch	3 or 4
Medium cutting, 1 inch to 6 inches	4 or 5
Heavy cutting, 6 inches and over	5 or 6
Gas welding (light) up to 1/8 inch	4 or 5
Gas welding (medium) 1/8 inch to 1/2 inch	5 or 6
Gas welding (heavy) 1/2 inch and over	6 or 8


*Note: In gas welding or oxygen cutting in which the torch produces a high yellow light, use a filter or lens that absorbs the yellow or sodium line in the visible light of the operation.

10	Are employees and students who are welding on platforms, scaffolds, or runways protected from falls by railings, lifelines, or safety belts? [29 CFR 1910.252(b)(1)(i)]
11	When the work permits, are welders enclosed in an individual noncombustible booth or screened-in area with an internal, nonreflective surface? [29 CFR 1910.252(b)(2)(iii) and 1926.351(e)]

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12		Do booths and screens permit air circulation at the floor level? [29 CFR 1910.252(b)(2)(iii) and (c)(1)(ii)] <i>Note: At least 2 feet of space is recommended at the bottom.</i>
13		Are employees and students working nearby protected from arc welding rays by screens, booths, or shields? [29 CFR 1910.252(b)(2)(iii)]
14		Are employees and students given personal protective clothing to prevent injury from welding hazards? [29 CFR 1910.252(b)(3)]
15		Are all welding operations in confined spaces done with careful consideration to space ventilation, respiratory protection, rescue, escape, atmospheric testing, and personnel training? [29 CFR 1910.252(b)(4)]
16		Have all operations involving the welding, cutting, or heating of metals containing lead, cadmium, mercury, or beryllium been evaluated to determine if respiratory protection is required? [29 CFR 1926.353(c)]

Health Protection and Ventilation

17		Is local or general exhaust ventilation provided during welding to maintain concentrations of toxic materials such as fluorides, cadmium, zinc, beryllium, lead, or mercury within acceptable limits? [29 CFR 1910.252(c) and 1926.353(a)(2)]
18		Do the suppliers of fluxes, coatings, coverings, and filler metals supply information about the hazardous releases associated with these materials? [29 CFR 1910.252(c)(1)(iv)] <i>Note: Check the MSDS (material safety data sheet) for information.</i>
19		Is mechanical ventilation provided when there is less than 10,000 cubic feet of space per welder? [29 CFR 1910.252(c)(2)(i)(A)]
20		Is mechanical ventilation provided when the ceiling height is less than 16 feet? [29 CFR 1910.252(c)(2)(i)(B)]
21		Is contaminated air exhausted from a working space discharged into the open air and away from sources of fresh intake air? [29 CFR 1926.353(a)(4)]
22		Is first aid equipment for welders immediately available at all times? [29 CFR 1910.252(c)(13)]

Welding, Cutting, and Heating of Coatings

23		Is the welding, cutting, or heating of surfaces covered by a preservative coating prohibited unless the flammability of the coating has been evaluated by a competent person? [29 CFR 1926.354(a)] <i>Note: Preservative coatings shall be considered highly flammable when scrapings burn quickly.</i>
24		Are highly flammable coatings stripped from the area to be heated? [29 CFR 1926.354(b)]
25		Have preservative coatings been stripped from the object so that the temperature of the unstripped metal will not be appreciably raised? [29 CFR 1926.354(d)]
26		Are toxic preservative surfaces removed to at least 4 inches away from the area of heat application, or is suitable respiratory protection provided? [29 CFR 1926.354(c)]